

SEQUENCE LISTING

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Ron, Eliora
Orr, Elisha
Paitan, Yossi

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Val Asp Val Thr Gln Pro Asn Asp Val Asn Ala Phe Val Ala Thr Val
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Leu Arg Glu His Gly Arg Ile Asp Gly Val Ile His Ala Ala Gly Ile
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Val Leu Ala Pro Lys Val Val Gly Leu Val Asn Leu Asp His Ala Thr
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	atggccgcgc	tgggagacga	agcgggactg	ggggcgcttc	accgggcgct	ggaactgggc	6060
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	caggagcgct	tggttcctgca	gagctgctgg	gaggtcctgg	aggacgcggg	gtacaccccg	6840
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	caacgaggcg	cctgcgtcat	ggccatcgcg	ggtggagtga	atctctacgt	ccaccgctcg	7140
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5	Leu	Ala Gln Gly Thr	Phe Thr Glu Glu	Lys Ile Leu Pro Pro Lys Leu
		35	40	45
10	Ala	Met His Gly Phe Thr	Leu Ser Phe Glu	Ala Thr Gly Glu Ala Ser
		50	55	60
	Ile	Arg Asn Phe Asn Ser	Leu Gly Asp Val Asp	Glu Asn Gly Ile Ile
	65	70	75	80
15	Gly	Glu Pro Ser Pro	Glu Ser Ala Glu Pro	Gly Pro Arg Pro Gln Leu
		85	90	95
	Leu	Leu Gly Ser Asp	Ile Gly Trp Met Arg	Tyr Gln Val Ser Ala Arg
		100	105	110
20	Val	Lys Ala Ala Val	Ser Ala Ser Leu Ser	Phe Leu Ala Ser Glu Asn
		115	120	125
25	Gln	Thr Glu Leu Ser	Val Thr Leu Ser Asp	Tyr Arg Ala His Pro Leu
		130	135	140
	Gly	Gln Asn Met Arg	Glu Ala Val Arg Ser	Asp Leu Ser Glu Leu Arg
		145	150	155
30	Leu	Met Gln Ala Thr	Asp Leu Ala Lys Leu	Thr Thr Gly Asp Ala Val
		165	170	175
	Ala	Trp His Val Arg	Gly Ala Leu His Thr	Arg Leu Glu Leu Asn Trp
		180	185	190
35	Ala	Asp Ile Phe Pro	Thr Asn Leu Asn Arg	Leu Gly Phe Leu Arg Gly
		195	200	205
40	Asn	Glu Leu Leu Ala	Leu Lys Thr Ser Ala	Lys Ala Gly Leu Ser Ala
		210	215	220
	Arg	Val Ser Leu Thr	Asp Asp Tyr Gln Leu	Ser Phe Ser Arg Pro Arg
		225	230	235
45	Ala	Gly Arg Ile Gln	Val Ala Val Arg Lys	Val Lys Ser His Glu Gln
		245	250	255
	Ala	Leu Ser Ala Gly	Leu Gly Ile Thr Val	Glu Leu Leu Asp Pro Ala
		260	265	270
50	Thr	Val Lys Ala Gln	Leu Gly Gln Leu Leu	Glu Ala Leu Leu Gly Pro
		275	280	285
55	Val	Leu Arg Asp Leu	Val Lys Lys Gly Thr	Thr Ala Val Glu Ile Met
		290	295	300
	Asp	Gly Leu Val Asp	Lys Ala Ser Lys Ala	Lys Leu Asp Asp Asn Gln
		305	310	315
60	Lys	Lys Val Leu Gly	Leu Val Leu Glu Arg	Leu Gly Ile Asp Pro Gln
		325	330	335

Leu Ala Asp Pro Ala Asn Leu Pro Gln Ala Trp Ala Asp Phe Lys Ala
 340 345 350
 5 Arg Val Ala Glu Ser Leu Glu Asn Ala Val Arg Thr Gln Val Ala Glu
 355 360 365
 Gly Phe Glu Tyr Glu Tyr Leu Arg Leu Ser Glu Thr Ser Thr Leu Leu
 370 375 380
 10 Glu Val Val Val Glu Asp Val Thr Ala Met Arg Phe His Glu Ser Leu
 385 390 395 400
 Leu Lys Gly Asn Leu Val Glu Leu Leu Lys Trp Met Lys Ser Leu Pro
 405 410 415
 Ala Gln Gln Ser Glu Phe Glu Leu Arg Asn Tyr Leu His Ala Thr Thr
 420 425 430
 20 Leu Thr Arg Gln Gln Ala Ile Gly Phe Ser Leu Gly Leu Gly Ser Phe
 435 440 445
 Glu Leu Leu Lys Ala Lys Asn Val Ser Lys Gln Ser Trp Val Thr Gln
 450 455 460
 25 Glu Asn Phe Gln Gly Ala Arg Arg Met Ala Phe Leu Gly Arg Arg Gly
 465 470 475 480
 Tyr Glu Asp Lys Leu Leu Gly Thr Arg Gly Gln Trp Val Val Asp Leu
 485 490 495
 30 Lys Ala Asp Met Thr Arg Phe Ser Pro Thr Pro Val Ala Ser Asp Phe
 500 505 510
 Gly Tyr Gly Leu His Leu Met Leu Trp Gly Arg Gln Lys Lys Leu Ser
 515 520 525
 Arg Lys Asp Leu Gln Gln Ala Val Asp Asp Ala Val Val Trp Gly Val
 530 535 540
 40 Leu Asp Ala Lys Asp Ala Ala Thr Val Ile Ser Thr Met Gln Glu Asp
 545 550 555 560
 Met Gly Lys His Pro Ile Glu Thr Arg Leu Glu Leu Lys Met Ala Asp
 565 570 575
 Asp Ser Phe Arg Ala Leu Val Pro Arg Ile Gln Thr Leu Glu Leu Ser
 580 585 590
 50 Arg Phe Ser Arg Ala Leu Ala Arg Ala Leu Pro Trp Ser Glu Gln Leu
 595 600 605
 Pro Arg Ala Ser Ala Glu Phe Arg Arg Ala Val Tyr Ala Pro Ile Trp
 610 615 620
 55 Glu Ala Tyr Leu Arg Glu Val Gln Glu Gln Gly Ser Leu Met Leu Asn
 625 630 635 640
 Asp Leu Ser Pro Ser Arg Ala Ala Gln Ile Ala Lys Trp Tyr Phe Gln
 645 650 655
 60

Lys Asp Pro Thr Val Arg Asp Leu Gly Lys Asp Leu Gln Leu Ile Glu
 660 665 670
 5 Ser Glu Trp Arg Pro Gly Gly Gly Asn Phe Ser Phe Ala Glu Val Ile
 675 680 685
 Ser Lys Asn Pro Asn Thr Leu Met Arg Cys Arg Asn Phe Val Ser Gly
 690 695 700
 10 Met Val Arg Leu Arg Arg Ala Ile Asp Glu Arg Lys Ala Pro Asp Glu
 705 710 715 720
 Leu Arg Thr Val Phe Gly Glu Leu Glu Gly Met Trp Thr Thr Gly Phe
 725 730 735
 15 His Leu Arg Ala Ala Gly Ser Leu Leu Ser Asp Leu Ala Gln Ser Thr
 740 745 750
 20 Pro Leu Gly Leu Ala Gly Val Glu Arg Thr Leu Thr Val Arg Val Ala
 755 760 765
 Asp Ser Glu Glu Gln Leu Val Phe Ser Thr Ala Arg Ser Thr Gly Ala
 770 775 780
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 20 25 30
 40 Pro Phe Gly Gly Leu Val Gly Arg Glu Val Asp Leu Asp Ala Phe Leu
 35 40 45
 45 Gln Thr Leu Met Asp Arg Ile Ala Ile Thr Leu Gln Ala Asp Arg Gly
 50 55 60
 Thr Leu Trp Leu Leu Asp Pro Ala Arg Arg Glu Leu Phe Ser Arg Ala
 65 70 75 80
 50 Ala His Leu Pro Glu Val Ser Gln Ile Arg Val Lys Leu Gly Gln Gly
 85 90 95
 Val Ala Gly Thr Val Ala Lys Ala Gly His Ala Ile Asn Val Pro Asp
 100 105 110
 55 Pro Arg Gly Glu Gln Arg Phe Phe Ala Asp Ile Asp Arg Met Thr Gly
 115 120 125
 60 Tyr Arg Thr Thr Ser Leu Leu Ala Val Pro Leu Arg Asp Gly Asp Gly
 130 135 140

Ala Leu Tyr Gly Val Leu Gln Val Leu Asn Arg Arg Gly Glu Asp Arg
 145 150 155 160

5 Phe Thr Asp Glu Asp Thr Gln Arg Leu Thr Ala Ile Ala Ser Gln Val
 165 170 175

Ser Thr Ala Leu Gln Ser Thr Ser Leu Tyr Gln Glu Leu Gln Arg Ala
 180 185 190

10 Lys Glu Gln Pro Gln Val Pro Val Gly Tyr Phe Phe Asn Arg Ile Ile
 195 200 205

Gly Glu Ser Pro Gln Leu Gln Ala Ile Tyr Arg Leu Val Arg Lys Ala
 210 215 220

15 Ala Pro Thr Asp Ala Thr Val Leu Leu Arg Gly Glu Ser Gly Ser Gly
 225 230 235 240

20 Lys Glu Leu Phe Ala Arg Ala Val His Val Asn Gly Pro Arg Arg Asp
 245 250 255

Gln Pro Phe Ile Lys Val Asp Cys Ala Ala Leu Pro Ala Thr Leu Ile
 260 265 270

25 Glu Asn Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Gly Ala Asp
 275 280 285

His Arg Val Pro Gly Lys Phe Glu Ala Ala Ser Gly Gly Thr Val Phe
 290 295 300

30 Ile Asp Glu Ile Gly Glu Leu Pro Leu Pro Val Gln Gly Lys Leu Leu
 305 310 315 320

35 Arg Val Ile Gln Asp Arg Glu Phe Glu Arg Val Gly Gly Thr Gln Ala
 325 330 335

Val Lys Val Asp Val Arg Ile Val Ala Ala Thr His Arg Asp Leu Ala
 340 345 350

40 Arg Met Val Ala Glu Gly Arg Phe Arg Glu Asp Leu Tyr Tyr Arg Ile
 355 360 365

Lys Val Val Glu Val Val Leu Pro Pro Leu Arg Glu Arg Gly Ala Glu
 370 375 380

45 Asp Ile Glu Arg Leu Ala Arg His Phe Val Ala Ala Val Ala Arg Arg
 385 390 395 400

50 His Arg Leu Thr Pro Pro Arg Leu Ser Ala Ala Val Glu Arg Leu
 405 410 415

Lys Arg Tyr Arg Trp Pro Gly Asn Val Arg Glu Leu Glu Asn Cys Ile
 420 425 430

55 Glu Ser Ala Val Val Leu Cys Glu Gly Glu Ile Leu Glu Glu His Leu
 435 440 445

Pro Leu Pro Asp Val Asp Arg Ala Ala Leu Pro Pro Pro Ala Ala Ala
 450 455 460

60 Gln Gly Val Asn Ala Pro Thr Ala Pro Ala Pro Leu Asp Ala Gly Leu

465 470 475 480
 Leu Pro Leu Ala Glu Val Glu Arg Arg His Ile Leu Arg Val Leu Asp
 485 490 495
 5 Ala Val Lys Gly Asn Arg Thr Ala Ala Ala Arg Val Leu Ala Ile Gly
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 10 Arg Asn Thr Leu Ala Arg Lys Leu Lys Glu Tyr Gly Leu Gly Asp Glu
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 Arg Ile Gly Gly Asn Thr Ala Cys Val Glu Val Thr Ser Gln Gly His
 35 40 45
 30 Arg Leu Ile Leu Asp Ala Gly Thr Gly Ile Arg Ala Leu Gly Glu Ile
 50 55 60
 Met Met Arg Glu Gly Ala Pro Gln Glu Ala Thr Leu Phe Phe Ser His
 65 70 75 80
 Leu His Trp Asp His Val Gln Gly Phe Pro Phe Phe Thr Pro Ala Trp
 85 90 95
 40 Leu Pro Thr Ser Glu Leu Thr Leu Tyr Gly Pro Gly Ala Asn Gly Ala
 100 105 110
 Gln Ala Leu Gln Ser Glu Leu Ala Ala Gln Met Gln Pro Leu His Phe
 115 120 125
 45 Pro Val Pro Leu Ser Thr Met Arg Ser Arg Met Asp Phe Arg Ser Ala
 130 135 140
 Leu His Ala Arg Pro Val Glu Val Gly Pro Phe Arg Val Thr Pro Ile
 145 150 155 160
 Asp Val Pro His Pro Gln Gly Cys Leu Ala Tyr Arg Leu Glu Ala Asp
 165 170 175
 55 Gly His Ser Phe Val Tyr Ala Thr Asp Val Glu Val Arg Val Gln Glu
 180 185 190
 Leu Ala Pro Glu Val Gly Arg Leu Phe Glu Gly Ala Asp Val Leu Cys
 195 200 205
 60 Leu Asp Ala Gln Tyr Thr Pro Asp Glu Tyr Glu Gly Arg Lys Gly Val

210 215 220
 Ala Lys Lys Gly Trp Gly His Ser Thr Met Met Asp Ala Ala Gly Val
 225 230 235 240
 5 Ala Gly Leu Val Gly Ala Arg Arg Leu Cys Leu Phe His His Asp Pro
 245 250 255
 10 Ala His Gly Asp Asp Met Leu Glu Asp Met Ala Glu Gln Ala Arg Ala
 260 265 270
 Leu Phe Pro Val Cys Glu Pro Ala Arg Glu Gly Gln Arg Leu Val Leu
 275 280 285
 15 Gly Arg Ala Ala
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 Arg Val Asn His Glu Lys Val Ala Ala Ala Gln Leu Gly Lys His Gly
 20 25 30
 30 Tyr Glu Phe Phe Leu Pro Thr Tyr Thr Pro Pro Lys Ser Ser Gly Val
 35 40 45
 Lys Ala Lys Leu Pro Leu Phe Pro Gly Tyr Leu Phe Cys Arg Tyr Gln
 35 50 55 60
 Pro Leu Asn Pro Tyr Arg Ile Val Arg Ala Pro Gly Val Ile Arg Leu
 65 70 75 80
 40 Leu Gly Gly Asp Ala Gly Pro Glu Ala Val Pro Ala Gln Glu Leu Glu
 85 90 95
 Ala Ile Arg Arg Val Ala Asp Ser Gly Val Ser Ser Asn Pro Cys Asp
 100 105 110
 45 Tyr Leu Arg Val Gly Gln Arg Val Arg Ile Ile Glu Gly Pro Leu Thr
 115 120 125
 Gly Leu Glu Gly Ser Leu Val Thr Ser Lys Ser Gln Leu Arg Phe Ile
 50 130 135 140
 Val Ser Val Gly Leu Leu Gln Arg Ser Val Ser Val Glu Val Ser Ala
 145 150 155 160
 55 Glu Gln Leu Glu Pro Ile Thr Asp
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<213> Myxococcus xanthus

<400> 7

5 Met Asp Lys Arg Ile Ile Phe Asp Ile Val Thr Ser Ser Val Arg Glu
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Val Val Pro Glu Leu Glu Ser His Pro Phe Glu Pro Glu Asp Asp Leu
20 25 30
10 Val Gly Leu Gly Ala Asn Ser Leu Asp Arg Ala Glu Ile Val Asn Leu
35 40 45
Thr Leu Glu Lys Leu Ala Leu Asn Ile Pro Arg Val Glu Leu Ile Asp
50 55 60
15 Ala Lys Thr Ile Gly Gly Leu Val Asp Val Leu His Ala Arg Leu
65 70 75

20 <210> 8

<211> 420

<212> Amino acid

<213> Myxococcus xanthus

25 <400> 8

Met Gly Pro Val Gly Ile Glu Ala Met Asn Ala Tyr Cys Gly Ile Ala
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20 25 30
Arg Phe Ala Asn Leu Leu Met Glu Glu Lys Thr Val Pro Leu Pro Tyr
35 40 45
35 Glu Asp Pro Val Thr Tyr Gly Val Asn Ala Ala Arg Pro Ile Leu Asp
50 55 60
Gln Leu Thr Ala Ala Glu Arg Asp Ser Ile Glu Leu Leu Val Ala Cys
65 70 75 80
40 Thr Glu Ser Ser Phe Asp Phe Gly Lys Ala Met Ser Thr Tyr Leu His
85 90 95
Gln His Leu Gly Leu Ser Arg Asn Cys Arg Leu Ile Glu Leu Lys Ser
45 100 105 110
Ala Cys Tyr Ser Gly Val Ala Gly Leu Gln Met Ala Val Asn Phe Ile
115 120 125
50 Leu Ser Gly Val Ser Pro Gly Ala Lys Ala Leu Val Val Ala Ser Asp
130 135 140
Leu Ser Arg Phe Ser Ile Ala Glu Gly Gly Asp Ala Ser Thr Glu Asp
55 145 150 155 160
Trp Ser Phe Ala Glu Pro Ser Ser Gly Ala Gly Ala Val Ala Met Leu
165 170 175
60 Val Ser Asp Thr Pro Arg Val Phe Arg Val Asp Val Gly Ala Asn Gly
180 185 190

Tyr Tyr Gly Tyr Glu Val Met Asp Thr Cys Arg Pro Val Ala Asp Ser
 195 200 205
 5 Glu Ala Gly Asp Ala Asp Leu Ser Leu Leu Ser Tyr Leu Asp Cys Cys
 210 215 220
 Glu Asn Ala Phe Arg Glu Tyr Thr Arg Arg Val Pro Ala Ala Asn Tyr
 225 230 235 240
 10 Ala Glu Ser Phe Gly Tyr Leu Ala Phe His Thr Pro Phe Gly Gly Met
 245 250 255
 Val Lys Gly Ala His Arg Thr Met Met Arg Lys Phe Ser Gly Lys Asn
 260 265 270
 15 Arg Gly Asp Ile Glu Ala Asp Phe Gln Arg Arg Val Ala Pro Gly Leu
 275 280 285
 20 Thr Tyr Cys Gln Arg Val Gly Asn Ile Met Gly Ala Thr Met Ala Leu
 290 295 300
 Ser Leu Leu Gly Thr Ile Asp His Gly Asp Phe Ala Thr Ala Lys Arg
 305 310 315 320
 25 Ile Gly Cys Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe Phe Ser
 325 330 335
 Gly Val Val Thr Glu Glu Gly Gln Gln Arg Gln Arg Ala Leu Gly Leu
 340 345 350
 30 Gly Glu Ala Leu Gly Arg Arg Gln Gln Leu Ser Met Pro Asp Tyr Asp
 355 360 365
 35 Ala Leu Leu Lys Gly Asn Gly Leu Val Arg Phe Gly Thr Arg Asn Ala
 370 375 380
 Glu Leu Asp Phe Gly Val Val Gly Ser Ile Arg Pro Gly Gly Trp Gly
 385 390 395 400
 40 Arg Pro Leu Leu Phe Leu Ser Ala Ile Arg Asp Phe His Arg Asp Tyr
 405 410 415
 Gln Trp Ile Ser
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 20 25 30
 60 Leu Phe Ala Gly Gln Ile Gly Asp Trp Ala Trp Asp Thr Val Ser Arg
 35 40 45

Leu Cys Gly Thr Asp Val Leu Thr Ala Thr Asn Ala Ser Gly Ala Pro
 50 55 60
 5 Thr Tyr Leu Ala Phe Tyr Tyr Phe Arg Ile Arg Gly Thr Pro Ala Leu
 65 70 75 80
 His Pro Gly Ala Leu Arg Phe Gly Asp Thr Leu Asp Val Thr Ser Lys
 85 90 95
 10 Ala Tyr Asn Phe Gly Ser Glu Ser Val Leu Thr Val His Arg Ile Cys
 100 105 110
 Lys Thr Ala Glu Gly Gly Ala Pro Glu Ala Asp Ala Phe Gly His Glu
 115 120 125
 15 Glu Leu Tyr Glu Gln Pro Gln Pro Gly Arg Ile Tyr Ala Glu Thr Phe
 130 135 140
 20 Asn Arg Trp Ile Thr Arg Ser Asp Gly Lys Ser Asn Glu Ser Leu Ile
 145 150 155 160
 Lys Ser Ser Pro Val Gly Phe Gln Tyr Ala His Leu Pro Leu Leu Pro
 165 170 175
 25 Asp Glu Tyr Ser Pro Arg Arg Ala Tyr Gly Asp Ala Arg Ala Arg Gly
 180 185 190
 Thr Phe His Asp Val Asp Ser Ala Glu Tyr Arg Leu Thr Val Asp Arg
 195 200 205
 30 Phe Pro Leu Arg Tyr Ala Val Asp Val Ile Arg Asp Val Asn Gly Val
 210 215 220
 Gly Leu Ile Tyr Phe Ala Ser Tyr Phe Ser Met Val Asp Trp Ala Ile
 225 230 235 240
 35 Trp Gln Leu Ala Arg His Gln Gly Arg Ser Glu Gln Ala Phe Leu Ser
 245 250 255
 40 Arg Val Val Leu Asp Gln Gln Leu Cys Phe Leu Gly Asn Ala Ala Leu
 260 265 270
 Asp Thr Thr Phe Asp Ile Asp Val Gln His Trp Glu Arg Val Gly Gly
 275 280 285
 45 Gly Glu Glu Leu Phe Asn Val Lys Met Arg Glu Gly Ala Gln Gly Arg
 290 295 300
 50 Asp Ile Ala Val Ala Thr Val Lys Val Arg Phe Asp Ala Ala Ser Glu
 305 310 315 320
 Gly Gly Arg Arg Gly
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55
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 <211> 83
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 <213> Myxococcus xanthus
 60
 <400> 10

Met Thr Asp Glu Gln Ile Arg Gly Val Val His Gln Ser Ile Val Arg
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 5 20 25 30
 Arg Glu Leu Gly Ala Asp Ser Val Asp Arg Val Glu Ile Leu Thr Ser
 35 40 45
 Ile Leu Asp Ser Leu Arg Leu Gln Lys Thr Pro Leu Ala Lys Phe Ala
 10 50 55 60
 Asp Ile Arg Asn Ile Asp Ala Leu Val Ala Phe Leu Ala Gly Glu Val
 15 65 70 75 80
 Ala Gly Gly
 20 <210> 11
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 <212> Amino acid
 <213> Myxococcus xanthus
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 Asn Ala Val Asn Ala Ala Arg Pro Ile Leu Asp Ala Met Ser Pro Glu
 30 20 25 30
 Ala Arg Glu Arg Ile Glu Leu Leu Val Thr Ser Ser Glu Ser Gly Val
 35 35 40 45
 Asp Phe Ser Lys Ser Ile Ser Ser Tyr Ala His Glu His Leu Gly Leu
 50 55 60
 Ser Arg His Cys Arg Phe Leu Glu Val Lys Gln Ala Cys Tyr Ala Ala
 40 65 70 75 80
 Thr Gly Ala Leu Gln Leu Ala Leu Gly Tyr Ile Ala Ser Gly Val Ser
 85 90 95
 Pro Gly Ala Lys Ala Leu Val Ile Ala Thr Asp Val Thr Leu Val Asp
 45 100 105 110
 Glu Ser Gly Leu Tyr Ser Glu Pro Ala Met Gly Thr Gly Gly Val Ala
 115 120 125
 Val Leu Leu Gly Asp Glu Pro Arg Val Met Lys Met Asp Leu Gly Ala
 50 130 135 140
 Phe Gly Asn Tyr Ser Tyr Asp Val Phe Asp Thr Ala Arg Pro Ser Pro
 145 150 155 160
 Glu Ile Asp Ile Gly Asp Val Asp Arg Ser Leu Phe Thr Tyr Leu Asp
 55 165 170 175
 Cys Leu Lys His Ser Phe Ala Ala Tyr Gly Arg Arg Val Asp Gly Val
 60 180 185 190

Asp Phe Val Ser Thr Phe Asp Tyr Leu Ala Met His Thr Pro Phe Ala
 195 200 205
 5 Gly Leu Val Lys Ala Gly His Arg Lys Met Met Arg Glu Leu Thr Pro
 210 215 220
 Cys Asp Val Asp Glu Ile Glu Ala Asp Phe Gly Arg Arg Val Lys Pro
 225 230 235 240
 10 Ser Leu Gln Tyr Pro Ser Leu Val Gly Asn Leu Cys Ser Gly Ser Val
 245 250 255
 Tyr Leu Ser Leu Cys Ser Ile Ile Asp Thr Ile Lys Pro Glu Arg Ser
 260 265 270
 15 Ala Arg Val Gly Met Phe Ser Tyr Gly Ser Gly Cys Ser Ser Glu Phe
 275 280 285
 20 Phe Ser Gly Val Ile Gly Pro Glu Ser Val Ser Ala Leu Ala Gly Leu
 290 295 300
 Asp Ile Gly Gly His Leu Arg Gly Arg Arg Gln Leu Thr Phe Asp Gln
 305 310 315 320
 25 Tyr Val Glu Leu Leu Lys Glu Asn Leu Arg Cys Leu Val Pro Thr Lys
 325 330 335
 Asn Arg Asp Val Asp Val Glu Arg Tyr Leu Pro Leu Val Thr Arg Thr
 340 345 350
 30 Ala Ser Arg Pro Arg Met Leu Ala Leu Arg Arg Val Val Asp Tyr His
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 35 Arg Gln Tyr Glu Trp Val
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 50 Met Ala Arg Asp Gly Ala Lys Arg Pro Val Ala Val Phe Asp Ser Trp
 35 40 45
 Trp His Phe His Tyr Val Glu Asn Arg Ala Gly Ala Phe Gly Leu Phe
 50 55 60
 55 Ser Ser Phe Gly Glu Glu Trp Arg Met Pro Phe Phe Tyr Val Val Gly
 65 70 75 80
 60 Ala Ile Cys Ile Val Leu Leu Ile Gly Tyr Tyr Phe Tyr Thr Pro Pro
 85 90 95

Thr Met Lys Leu Gln Arg Trp Ser Leu Ala Thr Met Ile Gly Gly Ala
 100 105 110
 5 Leu Gly Asn Tyr Val Asp Arg Val Arg Leu Arg Tyr Val Val Asp Phe
 115 120 125
 Val Ser Trp His Val Gly Asp Arg Phe Tyr Trp Pro Ser Phe Asn Ile
 130 135 140
 10 Ala Asp Thr Ala Val Val Val Gly Ala Ala Leu Met Ile Leu Glu Ser
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 20 <213> Myxococcus xanthus
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 25 Pro Pro Val Ala Pro Val Gly Ala Gln Ala Leu Pro Arg Gly Pro Ala
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 30 Met Pro Gly Ile Ala Gln Leu Met Met Leu Phe Leu Arg Pro Thr Glu
 35 40 45
 Phe Leu Asp Arg Cys Ala Ala Arg Tyr Gly Asp Thr Phe Thr Leu Lys
 50 55 60
 35 Ile Pro Gly Thr Pro Pro Phe Ile Gln Thr Ser Asp Pro Ala Leu Ile
 65 70 75 80
 Glu Val Ile Phe Lys Gly Asp Pro Asp Leu Phe Leu Gly Gly Lys Ala
 85 90 95
 40 Asn Asn Gly Leu Lys Pro Val Val Gly Glu Asn Ser Leu Leu Val Leu
 100 105 110
 45 Asp Gly Lys Arg His Arg Arg Asp Arg Lys Leu Ile Met Pro Thr Phe
 115 120 125
 Leu Gly Glu Arg Met His Ala Tyr Gly Ser Val Ile Arg Asp Ile Val
 130 135 140
 50 Asn Ala Ala Leu Asp Arg Trp Pro Val Gly Lys Pro Phe Ala Val His
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 Glu Glu Thr Gln Gln Ile Met Leu Glu Val Ile Leu Arg Val Ile Phe
 165 170 175
 55 Gly Leu Glu Asp Ala Arg Thr Ile Ala Gln Phe Arg His His Val His
 180 185 190
 60 Gln Val Leu Lys Leu Ala Leu Phe Leu Phe Pro Asn Gly Glu Gly Lys
 195 200 205

Pro Ala Ala Glu Gly Phe Ala Arg Ala Val Gly Lys Ala Phe Pro Ser
 210 215 220

5 Leu Asp Val Phe Ala Ser Leu Lys Ala Ile Asp Asp Ile Ile Tyr Gln
 225 230 235 240

Glu Ile Gln Asp Arg Arg Ser Gln Asp Ile Ser Gly Arg Gln Asp Val
 245 250 255

10 Leu Ser Leu Met Met Gln Ser His Tyr Asp Asp Gly Ser Val Met Thr
 260 265 270

Pro Gln Glu Leu Arg Asp Glu Leu Met Thr Leu Leu Met Ala Gly His
 275 280 285

15 Glu Thr Ser Ala Thr Ile Ala Ala Trp Cys Val Tyr His Leu Cys Arg
 290 295 300

20 His Pro Asp Ala Met Gly Lys Leu Arg Glu Glu Ile Ala Ala His Thr
 305 310 315 320

Val Asp Gly Val Leu Pro Leu Ala Lys Ile Asn Glu Leu Lys Phe Leu
 325 330 335

25 Asp Ala Val Val Lys Glu Thr Met Arg Ile Thr Pro Val Phe Ser Leu
 340 345 350

Val Ala Arg Val Leu Lys Glu Pro Gln Thr Ile Gly Gly Thr Thr Tyr
 355 360 365

30 Pro Ala Asn Val Val Leu Ser Pro Asn Ile Tyr Gly Thr His His Arg
 370 375 380

35 Ala Asp Leu Trp Gly Asp Pro Lys Val Phe Arg Pro Glu Arg Phe Leu
 385 390 395 400

Glu Glu Arg Val Asn Pro Phe His Tyr Phe Pro Phe Gly Gly Gly Ile
 405 410 415

40 Arg Lys Cys Ile Gly Thr Ser Phe Ala Tyr Tyr Glu Met Lys Ile Phe
 420 425 430

Val Ser Glu Thr Val Arg Arg Met Arg Phe Asp Thr Arg Pro Gly Tyr
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45 His Ala Lys Val Val Arg Arg Ser Asn Thr Leu Ala Pro Ser Gln Gly
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50 Val Pro Ile Ile Val Glu Ser Arg Leu Pro Ser
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 <213> Myxococcus xanthus

<400> 14

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 35 40 45
 Lys Gln Arg Leu Gly His Ser Ile Leu Glu Arg Ile Tyr Asp Ala Arg
 50 55 60
 10 Ala Ala Arg Leu Asp Pro Leu Asp Asp Val Leu Val Ser Phe Pro Ala
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 Ile Phe Met Ile Glu His Ala Leu Ala Arg Leu Leu Ile Asp Arg Gly
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 15 Ile Gln Pro Asp Ala Val Val Gly Ala Ser Met Gly Glu Val Ala Ala
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 20 Ala Ala Ile Ala Gly Ala Ile Ser Val Asp Ala Ala Val Ala Leu Val
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 130 135 140
 25 Leu Ala Val Leu His Glu Leu Glu Ala Cys Arg Gly Phe Thr Ser Val
 145 150 155 160
 Ala Arg Asp Gly Glu Val Ala Ala Ile Asn Tyr Pro Ser Asn Phe Val
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 30 Leu Ala Ala Asp Glu Ala Gly Leu Gly Arg Ile Gln Gln Glu Leu Ser
 180 185 190
 35 Gln Arg Ser Val Ala Phe His Arg Leu Pro Val Arg Tyr Pro Phe His
 195 200 205
 Ser Ser His Leu Asp Pro Leu Arg Glu Glu Tyr Arg Ser Arg Val Arg
 210 215 220
 40 Ala Asp Ser Leu Thr Trp Pro Arg Ile Pro Met Tyr Ser Cys Thr Thr
 225 230 235 240
 45 Ala Asn Arg Val His Asp Leu Arg Ser Asp His Phe Trp Asn Val Val
 245 250 255
 Arg Ala Pro Ile Gln Leu Tyr Asp Thr Val Leu Gln Leu Glu Gly Gln
 260 265 270
 50 Gly Gly Cys Asp Phe Ile Asp Val Gly Pro Ala Ala Ser Phe Ala Thr
 275 280 285
 55 Ile Ile Lys Arg Ile Leu Ala Arg Asp Ser Thr Ser Arg Leu Phe Pro
 290 295 300
 Leu Leu Ser Pro Ser Pro Ala Ser Thr Gly Ser Ser Met Gly
 305 310 315
 60 <210> 15
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<212> Amino acid

<213> Myxococcus xanthus

<400> 15

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10 Val Asn Ala Arg Lys Ala Ala Leu Phe Pro Gly Gln Gly Ser Gln Glu
35 40 45

15 Arg Gly Met Gly Ala Ala Leu Phe Asp Glu Phe Pro Asp Leu Thr Asp
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Ile Ala Asp Ala Ile Leu Gly Tyr Ser Ile Lys Arg Leu Cys Leu Glu
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20 Asp Pro Gly Lys Glu Leu Ala Gln Thr Gln Phe Thr Gln Pro Ala Leu
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Tyr Val Val Asn Ala Leu Ser Tyr Leu Lys Arg Leu Arg Glu Gly Ala
100 105 110

25 Glu Gln Pro Ala Phe Val Ala Gly His Ser Leu Gly Glu Tyr Asn Ala
115 120 125

30 Leu Leu Val Ala Gly Ala Phe Asp Phe Glu Thr Gly Leu Arg Leu Val
130 135 140

Lys Arg Arg Gly Glu Leu Met Ser Gly Ala Ser Gly Gly Thr Met Ala
145 150 155 160

35 Ala Val Val Gly Cys Asp Ala Val Ala Val Glu Gln Val Leu Arg Asp
165 170 175

Arg Gln Leu Thr Ser Leu Asp Ile Ala Asn Ile Asn Ser Pro Asp Gln
180 185 190

40 Ile Val Val Ser Gly Pro Ala Gln Asp Ile Glu Arg Ala Arg Gln Cys
195 200 205

Phe Val Asp Arg Gly Ala Arg Tyr Val Pro Leu Asn Val Arg Ala Pro
210 215 220

45 Phe His Ser Arg Tyr Met Gln Pro Ala Ala Ser Glu Phe Glu Arg Phe
225 230 235 240

50 Leu Ser Gln Phe Gln Tyr Ala Pro Leu Arg Cys Val Val Ile Ser Asn
245 250 255

Val Thr Gly Arg Pro Tyr Ala His Asp Asn Val Val Gln Gly Leu Ala
260 265 270

55 Leu Gln Leu Arg Ser Pro Val Gln Trp Thr Ala Thr Val Arg Tyr Leu
275 280 285

60 Leu Glu Gln Gly Val Glu Asp Phe Glu Glu Leu Gly Pro Gly Arg Val
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Leu Thr Arg Leu Ile Thr Ala Asn Lys Arg Gly Ala Pro Ala Pro Ala
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5 Thr Ala Ala Pro Ala Lys Trp Ala Asn Ala
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 35 40 45

25 Gln Ala Asn Gly Gln Thr Thr Ala His Leu Gly Ala Glu Ile Ala Ser
 50 55 60

Leu Ala Val Pro Glu Gly Val Thr Pro Gln Leu Trp Arg Ser Ala Thr
 65 70 75 80

30 Phe Ser Gly Gln Ala Ala Leu Val Thr Val His Glu Ala Trp Asn Ala
 85 90 95

Ala Arg Leu Gln Ala Val Pro Gly His Arg Ile Gly Leu Val Val Gly
 100 105 110

35 Gly Thr Asn Val Gln Gln Arg Asp Leu Val Leu Met Gln Asp Ala Tyr
 115 120 125

40 Arg Glu Arg Val Pro Phe Leu Arg Ala Ala Tyr Gly Ser Thr Phe Met
 130 135 140

Asp Thr Asp Leu Val Gly Leu Cys Thr Gln Gln Phe Ala Ile His Gly
 145 150 155 160

45 Met Ser Phe Thr Val Gly Gly Ala Ser Ala Ser Gly Leu Leu Ala Val
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Ile Gln Ala Ala Glu Ala Val Leu Ser Arg Lys Val Asp Val Cys Ile
 180 185 190

50 Ala Val Gly Ala Leu Met Asp Val Ser Tyr Trp Glu Cys Gln Gly Leu
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55 Arg Ala Met Gly Ala Met Gly Thr Asp Arg Phe Ala Arg Glu Pro Glu
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Arg Ala Cys Arg Pro Phe Asp Arg Glu Ser Asp Gly Phe Ile Phe Gly
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60 Glu Ala Cys Gly Ala Val Val Val Glu Ser Ala Glu His Ala Arg Arg
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Arg Gly Val Thr Pro Arg Gly Ile Leu Ser Gly Trp Ala Met Gln Leu
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5 Asp Ala Ser Arg Gly Pro Leu Ser Ser Ile Glu Arg Glu Ser Gln Val
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Ile Gly Ala Ala Leu Arg His Ala Asp Leu Ala Pro Glu Arg Val Asp
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10 Tyr Val Asn Pro His Gly Ser Gly Ser Arg Gln Gly Asp Ala Ile Glu
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Leu Gly Ala Leu Lys Ala Cys Gly Leu Thr His Ala Arg Val Asn Thr
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15 Thr Lys Ser Ile Thr Gly His Gly Leu Ser Ser Ala Gly Ala Val Gly
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20 Leu Ile Ala Thr Leu Val Gln Leu Glu Gln Gly Arg Leu His Pro Ser
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Leu Asn Leu Val Asp Pro Ile Asp Ser Ser Phe Arg Trp Val Gly Ala
 370 375 380

25 Thr Ala Glu Ala Gln Ser Leu Gln Asn Ala Leu Val Leu Ala Tyr Gly
 385 390 395 400

Phe Gly Gly Ile Asn Thr Ala Val Ala Val Arg Arg Ser Ala Thr Glu
 405 410 415

30 Ser

35 <210> 17
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Asp Asn Thr Ile Ser Arg Thr Leu Ile Asp Glu Cys Gln Gln Val Leu
 35 40 45

50 Thr Leu Cys Glu Glu His Ala Thr Thr Val Val Leu Glu Gly Leu Pro
 50 55 60

His Val Phe Cys Met Gly Ala Asp Phe Arg Ala Ile His Asp Arg Val
 65 70 75 80

55 Asp Asp Gly Arg Arg Glu Gln Gly Asn Ala Glu Gln Leu Tyr Arg Leu
 85 90 95

60 Trp Leu Gln Leu Ala Thr Gly Pro Tyr Val Thr Val Ala His Val Gln
 100 105 110

Gly Lys Ala Asn Ala Gly Gly Leu Gly Phe Val Ser Ala Cys Asp Ile
 115 120 125
 5 Val Leu Ala Lys Ala Glu Val Gln Phe Ser Leu Ser Glu Leu Leu Phe
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 Gly Leu Phe Pro Ala Cys Val Met Pro Phe Leu Ala Arg Arg Ile Gly
 145 150 155 160
 10 Ile Gln Arg Ala His Tyr Leu Thr Leu Met Thr Arg Pro Ile Asp Ala
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 Ala Gln Ala Leu Ser Trp Gly Leu Ala Asp Ala Val Asp Ala Asp Ser
 180 185 190
 15 Glu Lys Leu Leu Arg Leu His Leu Arg Arg Leu Arg Cys Leu Ser Lys
 195 200 205
 20 Pro Ala Val Thr Gln Tyr Lys Lys Tyr Ala Ser Glu Leu Gly Gly Gln
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 Leu Leu Ala Ala Met Pro Arg Ala Ile Ser Ala Asn Glu Ala Met Phe
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 Phe Gly Lys Val Asn Gly Asn Glu Arg Tyr Arg Ala Val Val Leu Thr
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 50 Gly Tyr Asp Thr Tyr Phe Ala Leu Gly Gly Thr Lys Ala Gly Leu Leu
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 Ser Ile Cys Asp Gly Ile Gly Ser Phe Asn Val Thr Asn Phe Tyr Ser
 85 90 95
 55 Leu Ala Leu Glu Cys Asp Ile Pro Val Ile Ser Ala Met Gln Gly His
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 60 Gly Val Gly Gly Gly Phe Ala Met Gly Leu Phe Ala Asp Phe Val Val
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Leu Ser Arg Glu Ser Val Tyr Thr Thr Asn Phe Met Arg Tyr Gly Phe
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5 Thr Pro Gly Met Gly Ala Thr Tyr Ile Val Pro Lys Arg Leu Gly Tyr
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Ser Leu Gly His Glu Leu Leu Leu Asn Ala Arg Asn Tyr Arg Gly Ala
 165 170 175

10 Asp Leu Glu Lys Arg Gly Val Pro Phe Pro Val Leu Pro Arg Lys Glu
 180 185 190

Val Leu Pro His Ala Tyr Glu Ile Ala Arg Asp Leu Ala Ala Lys Pro
 195 200 205

15 Arg Leu Ser Leu Val Thr Leu Lys Arg His Leu Val Arg Asp Ile Arg
 210 215 220

20 Arg Glu Leu Pro Asp Val Ile Glu Arg Glu Leu Glu Met His Gly Ile
 225 230 235 240

Thr Phe His His Asp Asp Val Arg Arg Arg Ile Glu Gln Leu Phe Leu
 245 250 255

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30 <210> 19
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 <212> Amino acid
 <213> Myxococcus xanthus

35 <400> 19
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40 Gly Pro Lys Asp Phe Asp Arg Leu Ala Glu Ala Leu Arg Ala Asn Arg
 35 40 45

45 Gly His Leu Arg Val Ala Met Arg Met Phe Glu Ser Leu Gly Trp Val
 50 55 60

Arg Arg Asp Ala Asp Asp Val Tyr Ala Val Thr Ala Ala Ala Ala Ala
 65 70 75 80

50 His Arg Ser Phe Pro Arg Glu Ala Gln Ser Leu Phe Ala Leu Pro Met
 85 90 95

Asp Arg Tyr Leu Arg Gly Glu Asp Gly Leu Ser Leu Ala Pro Trp Phe
 100 105 110

55 Glu Arg Ser Arg Ala Ser Trp Asp Thr Asp Asp Thr Leu Val Arg Glu
 115 120 125

60 Leu Leu Asp Gly Ala Ile Ile Thr Pro Leu Met Leu Ala Leu Glu Gln
 130 135 140

Arg Gly Gly Leu Lys Glu Ala Arg Arg Leu Ser Asp Leu Trp Ser Gly
 145 150 155 160
 5 Gly Asp Gly Arg Asp Thr Cys Val Pro Glu Ala Val Gln His Glu Leu
 165 170 175
 Ala Gly Phe Phe Ser Ala Gln Lys Trp Thr Arg Glu Asp Ala Val Asp
 180 185 190
 10 Ala Glu Leu Thr Pro Lys Gly Ala Phe Ile Phe Glu Arg Ala Leu Leu
 195 200 205
 Phe Ala Ile Val Gly Ser Tyr Arg Pro Met Leu Ala Ser Met Pro Gln
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 15 Leu Leu Phe Gly Asp Cys Asp Gln Val Phe Gly Arg Asp Glu Ala Gly
 225 230 235 240
 20 His Glu Leu His Leu Asp Arg Thr Leu Asn Val Ile Gly Ser Gly His
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 Gln His Arg Lys Tyr Phe Ala Glu Leu Glu Lys Leu Ile Ile Thr Val
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 Gly Cys Gly Asp Gly Thr Leu Leu Lys Arg Val Tyr Glu Thr Val Leu
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 30 Arg His Thr Arg Arg Gly Arg Ala Leu Asp Arg Phe Pro Leu Thr Leu
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 Ile Ala Ala Asp Phe Asn Glu Lys Ala Leu Glu Ala Ala Gly Arg Thr
 325 330 335
 35 Leu Ala Gly Leu Glu His Val Ala Leu Arg Ala Asp Val Ala Arg Pro
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 Asn Thr Leu His Ile Arg Ser Phe Leu Asp His Asp Arg Pro Tyr Gln
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 45 Pro Pro Ala Asp Arg Ala Gly Leu His Ala Arg Ile Pro Phe Asp Ser
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 Val Phe Val Gly Lys Ala Gly Gln Glu Val Val Pro Ala Glu Val Phe
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